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TECHNOLOGY AND PRODUCTIVITY

Technology and the Economy

- Link between technology innovation and national economic prosperity
- Technology (IT) affects labor productivity
 - Use of technology
 - Production of technology
- Study of 120 nations showed that for every 10% increase in broadband penetration GDP income increased by 1.3%

http://www.brookings.edu/~media/Files/rc/papers/2011/1019_technology_innovation_west/1019_technology_innovation_west.pdf
<http://www.house.gov/jec/growth/it.htm>

Productivity

- Productivity measures output produced per unit of input
- Productivity growth is the percent of change in productivity from one year to the next
- Measuring productivity growth at the national level is important because an increase means an increase in the standard of living

Productivity

Dataset: Labour productivity in the total economy

Variable												
Time	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Country												
Austria	33.5	33.8	34.5	34.7	35.3	36.1	37.3	38.1	38.3	38.1	38.9	
Belgium	44.1	43	43.5	44.1	45.8	45.5	46.1	46.9	46.3	45.5	46.2	
Estonia	7	7.4	7.7	8.2	8.7	9.2	9.7	10.3	10.1	10.3	10.8	
Finland	34.4	35.1	35.6	36.4	37.7	38.4	39.5	40.8	40.6	39.1	40.6	
France	42	42.4	43.6	44	44.3	44.9	46.2	46.4	45.6	45.5	46.3	
Germany	37.3	38.2	38.7	39.1	39.4	39.9	41.3	42	42	40.9	41.5	
Greece	17.1	17.8	18.1	19	19.6	19.8	20.8	21.4	21.1	21	20.4	
Ireland	44.1	45	47.3	49.1	49.7	50.4	51.1	52.2	52.2	54.7	57.2	
Italy	32	32.3	32.1	31.7	32.1	32.2	32.3	32.4	32.1	31.4	32	
Luxembourg	57.9	56.8	57.7	57.7	60.5	62.7	63.1	67.2	63	57.4	57.3	
Netherlands	41.3	41.6	41.8	42.4	43.8	44.7	45.5	46.2	46.6	45.3	46.3	
Portugal	16.6	16.6	16.7	16.8	16.9	17.2	17.3	18	17.8	18.1	18.6	
Slovak Republic	10.6	11	11.9	12.7	13	13.4	14.3	15.2	15.8	16.1	16.5	
Slovenia	15.4	15.9	16	16.5	17	18.2	19.3	20.1	20.1	18.8	19.5	
Spain	27.2	27.3	27.4	27.6	27.7	27.9	28.1	28.5	28.7	29.5	30.2	
United States	43.4	44.5	45.9	47.3	48.4	49.1	49.5	50.1	50.5	51.5	53.1	
Euro area	39.2	39.7	40.1	40.4	40.9	41.3	42.2	42.8	42.6	42.3	43.1	

data extracted on 28 Feb 2012 03:35 UTC (GMT) from OECD.Stat

Productivity Growth

Dataset: Labour productivity growth in the total economy

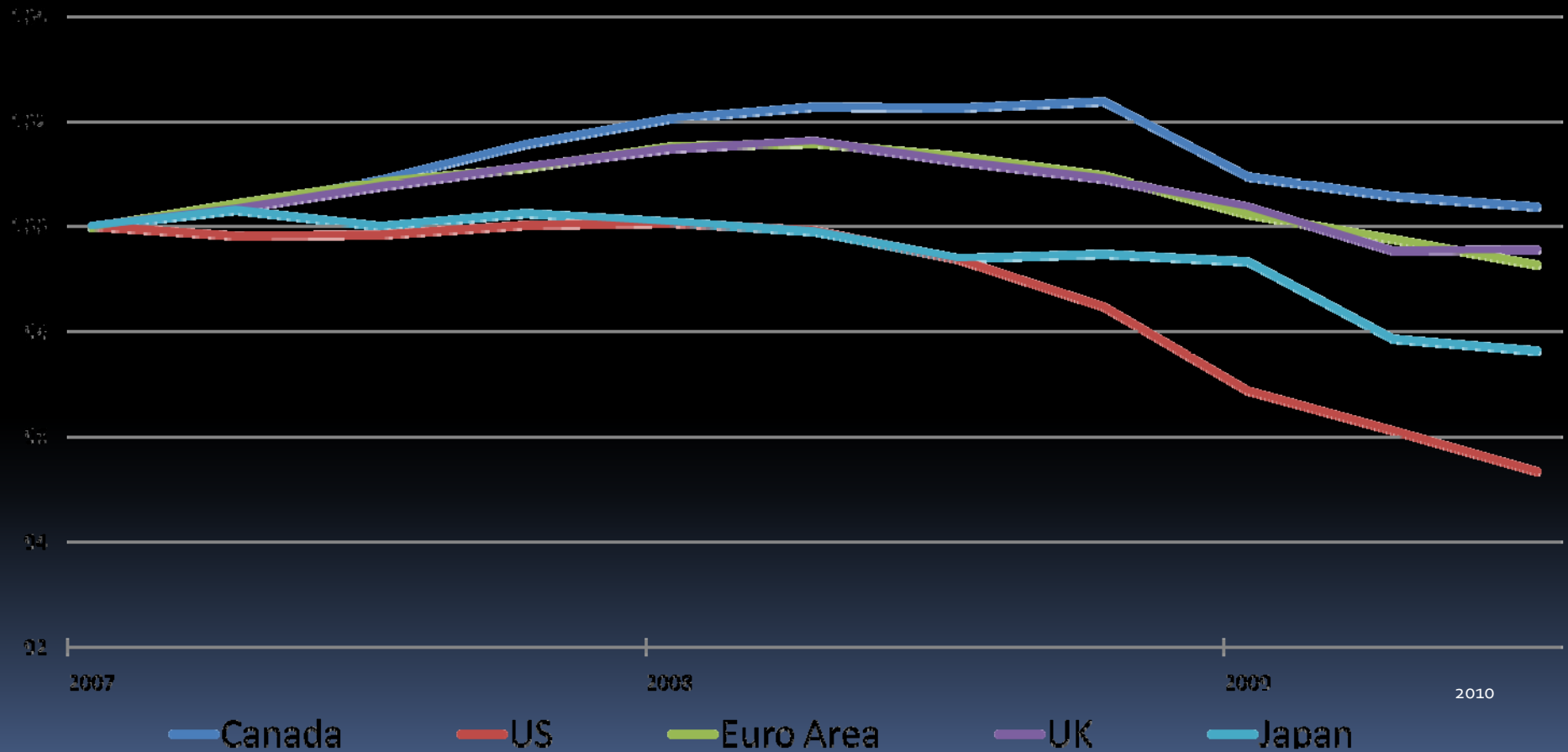
Variable										
Time	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Country										
Austria	0.9	1.9	0.7	1.6	2.2	3.3	2.2	0.4	-0.5	2.1
Belgium	-2.6	1.3	1.2	3.8	-0.7	1.5	1.6	-1.3	-1.6	1.3
Estonia	5.7	4.8	5.9	5.6	5.8	4.8	6.6	-2.4	2.3	4.6
Finland	1.9	1.3	2.4	3.4	1.9	2.9	3.2	-0.5	-3.9	3.8
France	0.9	2.9	1	0.5	1.5	2.8	0.3	-1.7	-0.2	1.7
Germany	2.5	1.4	0.9	0.8	1.2	3.6	1.7	-0.1	-2.5	1.4
Greece	4	1.7	4.9	2.9	1.3	5	2.8	-1.5	-0.3	-2.8
Ireland	2	5	3.8	1.3	1.2	1.4	2.1	0.1	4.5	4.5
Israel	0.2	-1.7	1.7	4.2	1.7	2.9	-0.1	-0.2	0.1	1.9
Italy	0.8	-0.6	-1.2	1.1	0.5	0.3	0.1	-0.9	-2	1.7
Luxembourg	-1.9	1.5	0	4.8	3.4	0.7	6.3	-6.5	-9.3	-0.1
Netherlands	0.7	0.7	1.4	3.2	2	1.8	1.6	1	-2.9	2
New Zealand	1.5	1.6	1.5	-0.7	1.2	1.1	2.2	-0.8	2.5	0.5
Portugal	-0.1	0.2	1.1	0.4	1.7	0.6	4.1	-1.5	1.6	3.2
Slovak Republic	4.3	7.4	6.8	2.3	3	6.7	5.9	3.7	1.8	2.4
Slovenia	3.2	0.8	3	3.2	6.7	5.9	4.1	0.1	-6.5	3.6
Spain	0.1	0.4	0.7	0.5	0.6	0.8	1.4	0.8	2.7	2.2
United States	2.3	3.1	3	2.3	1.5	0.8	1.2	0.7	2.1	3
Euro area	1.2	1.1	0.7	1.1	1.1	2.2	1.4	-0.4	-0.8	1.8

data extracted on 28 Feb 2012 03:15 UTC (GMT) from OECD.Stat

<http://stats.oecd.org/Index.aspx?DataSetCode=PDYGTH>

THE EMPLOYMENT LOSS HAS BEEN MORE SEVERE IN THE U.S THAN IN OTHER COUNTRIES

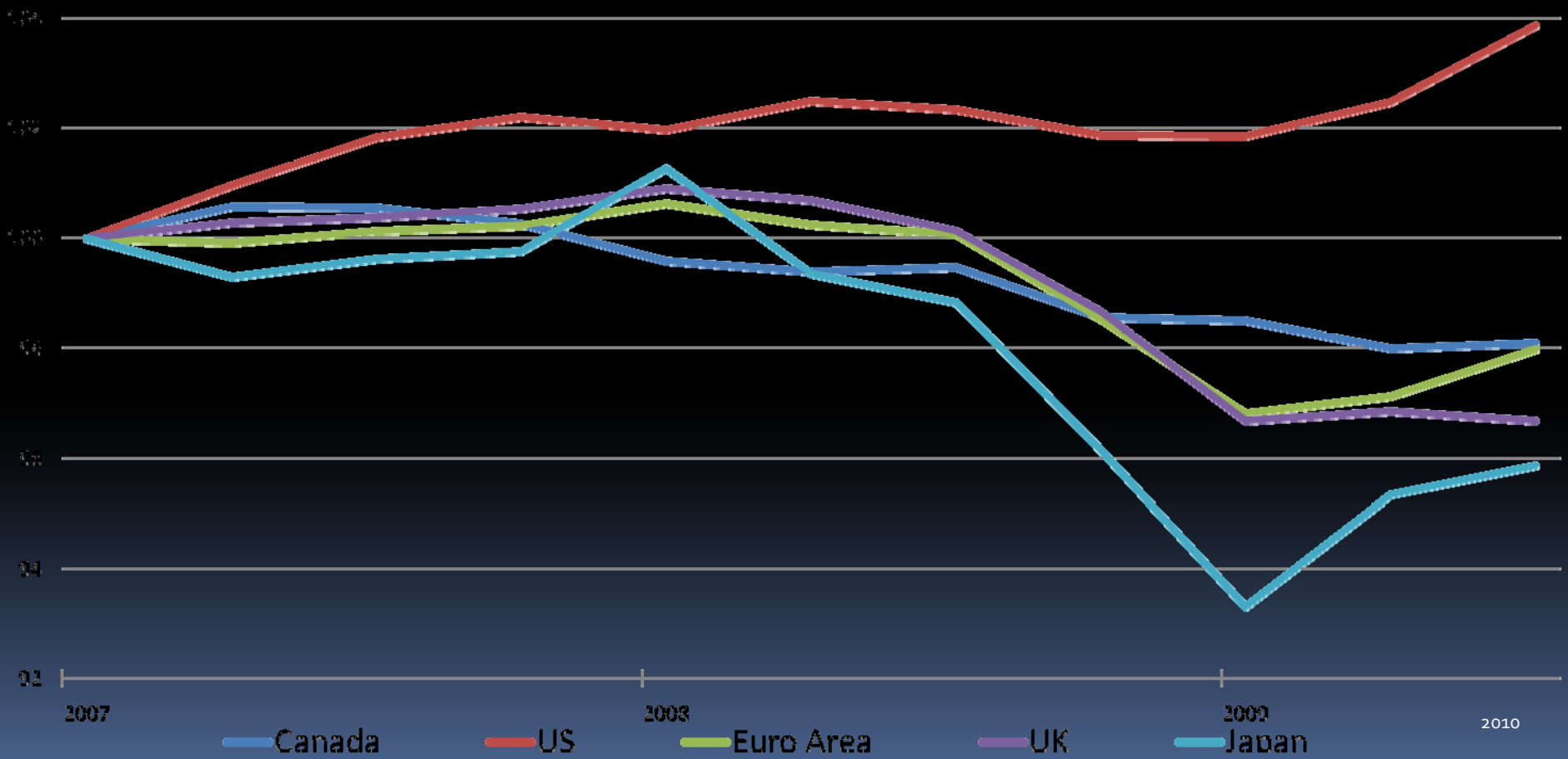
Employment, 2007:Q1 = 100



Source: StatCan (Canada), European Central Bank (Euro Area), Cabinet Office/Ministry of Health, Labour and Welfare (Japan), Office for

PRODUCTIVITY UP IN THE U.S, DOWN EVERYWHERE ELSE

Output per employed person, 2007:Q1 = 100



Productivity Growth EU vs US

EU (15)

- 2.4% growth from 1973-1995
- 1.5% growth from 1995-2006

U.S.A.

- 1.2% growth from 1973-1995
- 2.3% growth from 1995-2006

Why?

- Lower investment in information and technology
- Small share of technology industries

Meeting the Challenge of Europe 2020

“It also points to the fundamental changes taking place in the nature of innovation: no longer viewed as purely technological, but rather how firms exploit new technologies, not only to develop new products and services, but also new channels to market, new business processes, new organizational structures and new business models.”

http://www.europe-innova.eu/c/document_library/get_file?folderId=383528&name=DLFE-11601.pdf



QUESTIONS?